

AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings of claims in the application:

Please cancel claims 7, 8, 12 and 35-43 without prejudice.

Please amend claim 47 as follows.

Please add the following new claims 59-69 as follows.

LISTING OF THE CLAIMS

1. (Previously Presented) A process for the lost pattern casting of metals, said process comprising the steps of:
 - forming a pattern from a material;
 - forming an erodable coating around at least a portion of said pattern to form a mold, said coating comprising a particulate material and a binder;
 - removing said pattern from said mold;
 - delivering molten metal into said mold;
 - cooling said molten metal such that it only partially solidifies into a casting; and
 - removing at least a part of said mold with a solvent while the casting is partially solidified.
2. (Original) A process according to claim 1, wherein said material for forming said pattern comprises foam.
3. (Original) A process according to claim 1, wherein said step of delivering a molten metal into said mold and said step of removing said pattern from said mold occur approximately simultaneously.

4. (Original) A process according to claim 1, further comprising the step of forming an erodable backing around at least a portion of said erodable coating, said erodable backing comprising a particulate material and a binder.
5. (Original) A process according to claim 4, further comprising the steps of:
contacting said erodable backing with a solvent; and
removing at least a part of said erodable backing.
6. (Original) A process according to claim 4, wherein a weight percent of said binder in said erodable coating is greater than a weight percent of said binder in said erodable backing.
7. (Cancelled)
8. (Cancelled)
9. (Original) A process according to claim 1, wherein said step of forming an erodable coating around at least a portion of said pattern to form a mold is performed by dipping said pattern into a slurry comprising said coating.
10. (Original) A process according to claim 1, further comprising the step of attaching a gate to said pattern.
11. (Original) A process according to claim 10, wherein the step of delivering molten metal into said mold is performed by delivering molten metal through said gate.
12. (Cancelled)
13. (Original) A process according to claim 1, wherein said binder is soluble in said solvent.
14. (Original) A process according to claim 1, wherein said solvent comprises water.

15. (Original) A process according to claim 1, wherein said step of contacting said mold with a solvent comprises the step of spraying the solvent.
16. (Original) A process according to claim 1, wherein said mold is permeable to said solvent.
17. (Original) A process according to claim 1, wherein said step of contacting said mold with a solvent comprises the step of delivering the solvent to said mold in an amount of from 0.5 to 50 liters per second and at a pressure from 0.03 to 70 bar.
18. (Original) A process according to claim 1, wherein said solvent contains at least one of a grit and a surfactant.
19. (Original) A process according to claim 1, wherein the steps of removing at least a portion of said mold and cooling the molten metal are performed approximately simultaneously.
20. (Original) A process according to claim 1, wherein said step of cooling comprises contacting a shell of solidifying metal around said molten metal with said solvent.
21. (Original) A process according to claim 1, wherein said step of cooling comprises the step of using an already cooled portion of the casting as a chill to remove heat from a still molten portion of the casting.
22. (Original) A process according to claim 1, wherein said steps of (i) contacting said mold with a solvent; (ii) cooling said molten metal such that it at least partially solidifies to form a casting; and (iii) removing at least a part of said mold; are performed by lowering said mold into a bath of said solvent.

23-43 (Cancelled)

44. (Previously Presented) A process for the lost pattern casting of metals, said process comprising the steps of:

- forming a pattern from a material;
- forming a coating around at least a portion of said pattern to form a mold;
- forming a backing around at least a portion of said mold;
- removing said pattern from said mold;
- delivering molten metal into said mold;
- cooling said molten metal such that it partially solidifies to form a partially solidified casting,
- contacting said backing and said mold with a solvent to decompose at least a part of said backing and at least a part of said mold; and
- contacting the casting with solvent to further solidify the casting.

45. (Previously Presented) A process according to claim 44, wherein said steps of (i) contacting said backing with a solvent to decompose at least a part of said backing; and (ii) cooling said molten metal such that it at least partially solidifies to form a partially solidified casting; are performed by lowering said mold into a bath of said solvent.

46. (Previously Presented) A process according to claim 44 wherein the molten metal comprises aluminum and the solvent comprises water.

47. (Currently Amended) A process for the lost pattern casting of metals, said process comprising the steps of:

- forming a pattern from a material;
- forming an erodible coating around at least a portion of said pattern to form a mold, said coating comprising a particulate material and a binder;
- delivering molten metal into said mold;
- directing a fluid stream at the mold when a casting in the mold is partially solidified; and,
- dislodging at least a portion of the mold, including at least a portion of the particulate material, from the casting while the casting remains only partially solidified.

48. (Previously Presented) A process according to claim 47 further comprising removing said pattern from said mold and wherein said step of delivering a molten metal into said mold and said step of removing said pattern from said mold occur approximately simultaneously.
49. (Previously Presented) A process according to claim 47 further comprising the step of forming an erodable backing around at least a portion of said erodable coating, said erodable backing comprising a particulate material and a binder.
50. (Previously Presented) A process according to claim 49 further comprising the steps of contacting said erodable backing with the fluid stream and removing at least a part of said erodable backing.
51. (Previously Presented) A process according to claim 47 further comprising the step of attaching a gate to said pattern.
52. (Previously Presented) A process according to claim 51 wherein said step of delivering molten metal into said mold is performed by delivering molten metal through said gate.
53. (Previously Presented) A process according to claim 47 wherein said step of directing a fluid stream at the mold comprises the step of spraying a solvent at the mold.
54. (Previously Presented) A process according to claim 53 further comprising the step of permeating said mold with said solvent.
55. (Previously Presented) The process of claim 53 wherein said solvent is sprayed at the mold in an amount of from 0.5 to 50 liters per second and at a pressure from 0.03 to 70 bar.

56. (Previously Presented) The process of claim 47 further comprising the step of cooling said molten metal in said mold.
57. (Previously Presented) The process of claim 56 wherein said step of cooling comprises contacting a shell of solidifying metal around said molten metal with said fluid stream.
58. (Previously Presented) The process of claim 57 wherein said step of cooling comprises the step of using an already cooled portion of the casting as a chill to remove heat from a still molten portion of the casting.
59. (New) The process of claim 47 further comprising continuing to solidify the casting.
60. (New) A process for the lost pattern casting of metals, comprising:
 - forming a pattern from a material;
 - forming an erodable coating around at least a portion of the pattern to form a mold, the coating comprising a particulate material and a binder;
 - delivering molten metal into the mold;
 - directing a fluid stream at the mold when a casting in the mold is only partially solidified;
 - dislodging at least a portion of the mold, including at least a portion of the particulate material, from the casting with the fluid stream; and,
 - continuing to solidify the molten metal remaining in the casting.
61. (New) The process of claim 60 further comprising removing the pattern from the mold.
62. (New) The process of claim 60 further comprising permeating the mold with the solvent.
63. (New) The process of claim 60 further comprising cooling the casting.

64. (New) The process of claim 60 further comprising forming a shell of solidifying metal in the casting, the shell of solidifying metal enclosing remaining molten metal.
65. (New) The process of claim 60 further comprising using an already cooled portion of the casting as a chill to remove heat from a still molten portion of the casting.
66. (New) The process of claim 60 wherein the step of directing the fluid stream comprises spraying a solvent at the mold.
67. (New) The process of claim 66 wherein the step of directing includes spraying multiple streams of solvent at the mold.
68. (New) The process of claim 67 wherein the multiple streams of solvent are sprayed from multiple directions.
69. (New) The process of claim 60 further comprising moving the mold in relation to the fluid stream during the step of directing a fluid stream at the mold.
70. (New) The process of claim 60 wherein the fluid stream includes a solvent and the step of dislodging at least a portion of the mold comprises dissolving the mold with the solvent.
71. (New) The process of claim 70 wherein the solvent comprises water.